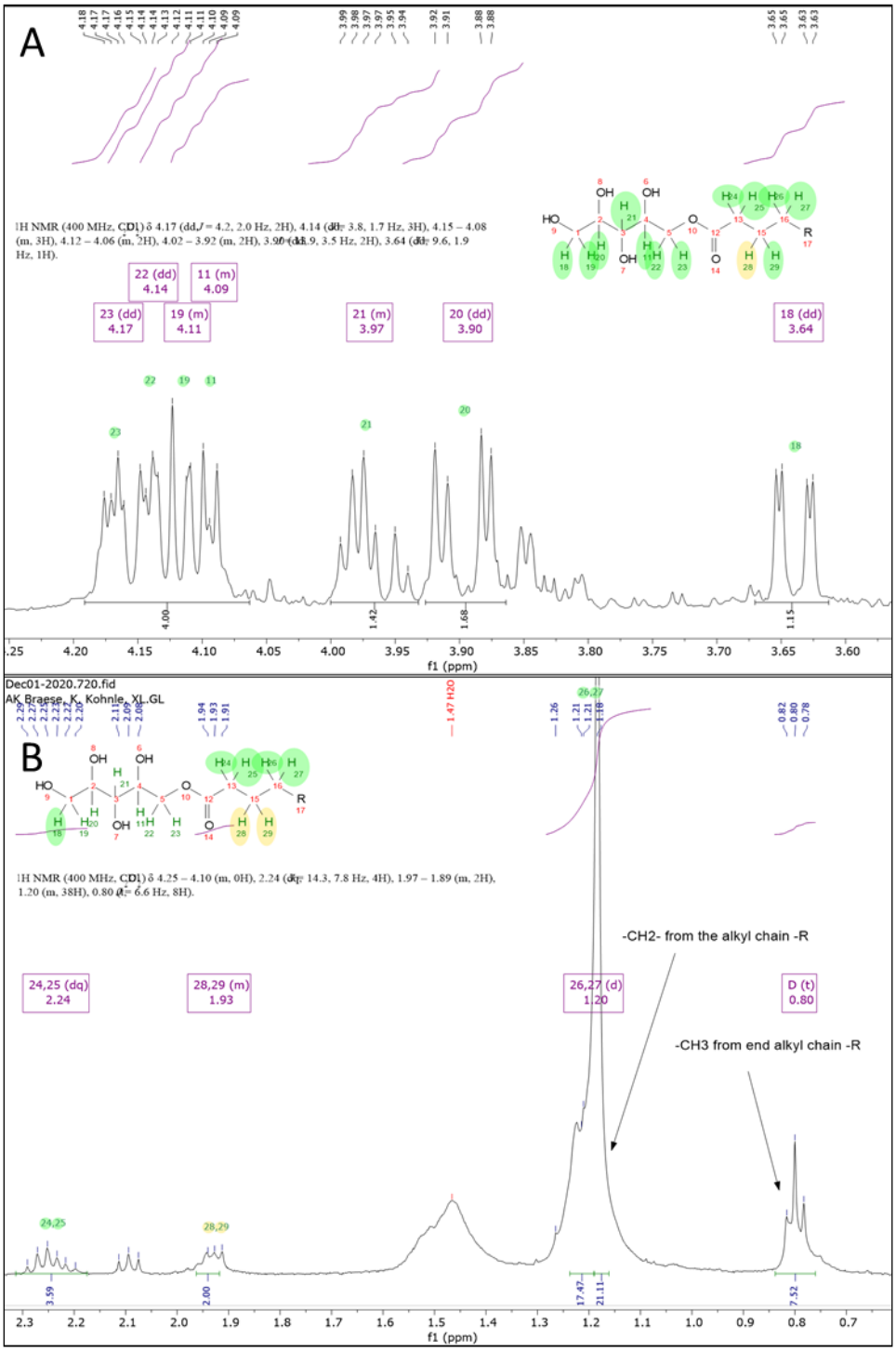


Figure S1. Treated ^{1}H-NMR experiment with zooms on the chemical shifts corresponding to the xylitol (A) and the fatty acids (B).

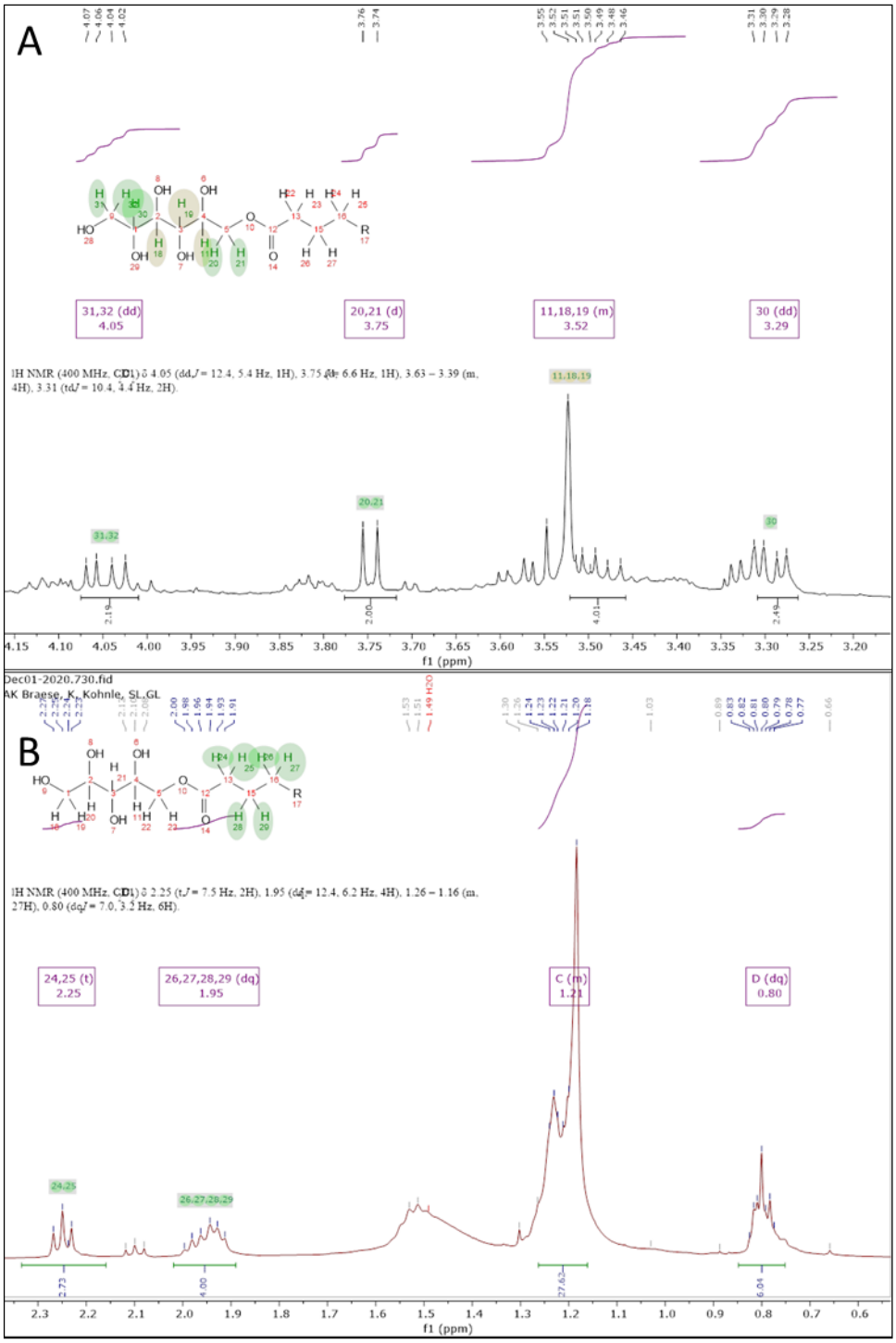


Figure S2. Treated ^{1}H-NMR experiment with zooms on the chemical shifts corresponding to the sorbitol (A) and the fatty acids (B).

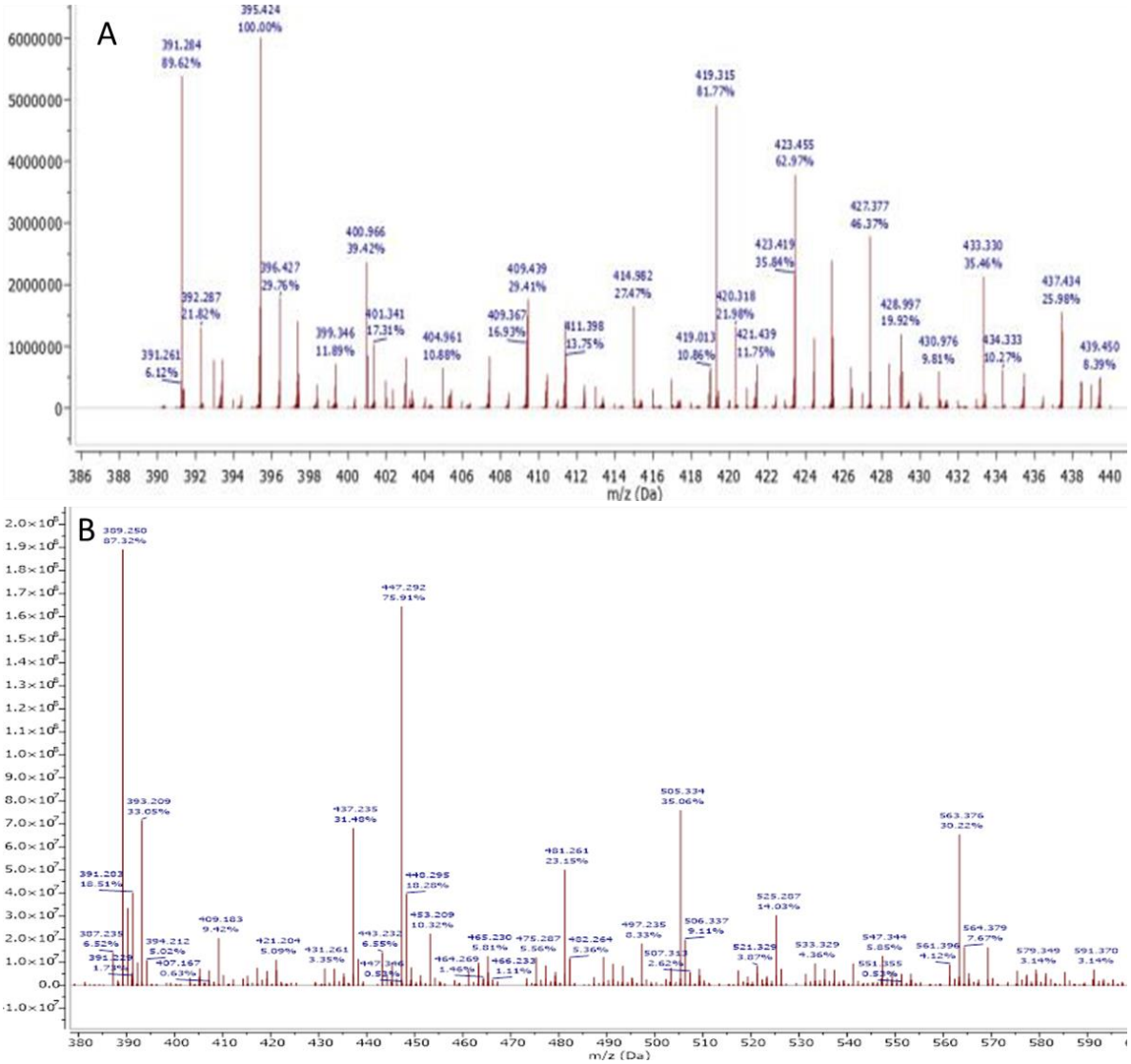


Figure S3. ESI-Q measurements of the isolated glycolipid fractions with xylitol-based esters (A) and sorbitol-based esters (B).

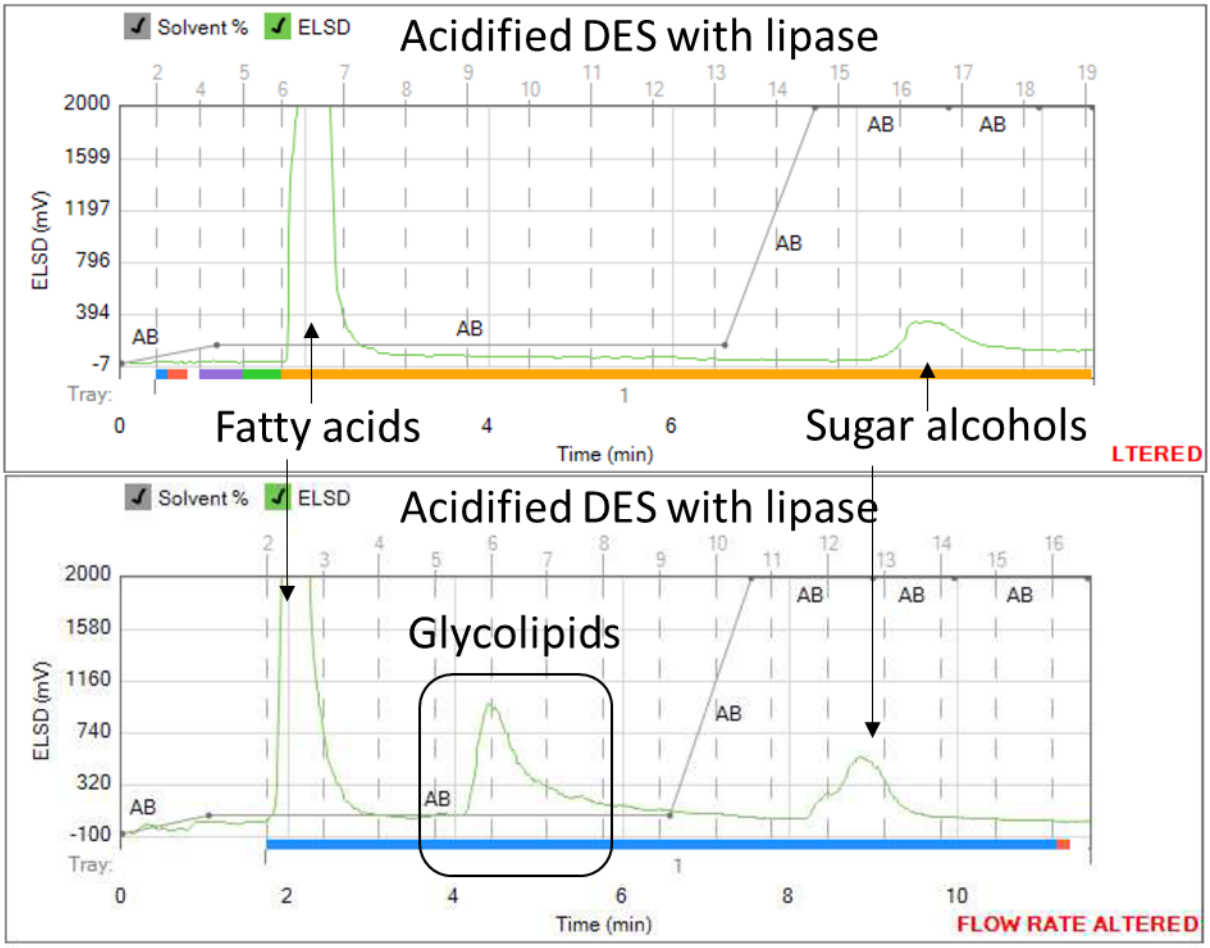
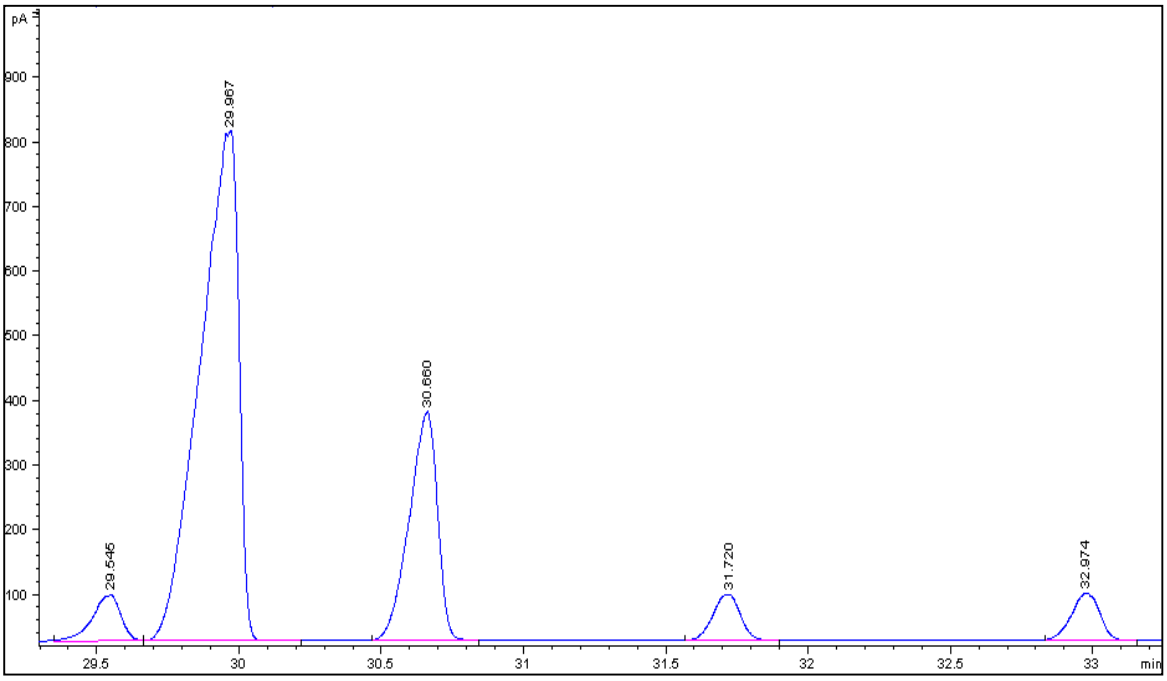


Figure S4. Chromatograms of flash chromatography purification for a standard and acidified sugar alcohol-based DES with lipase.



Component	Area [pA*s]	RetTime [min]	Percent	C [mg/ml]	C-Atoms	Molecular Weight [g/mol]
Methyl tetradeca	132,268814	22,49713898	0,92%	0,0919051	C14:0	242,4
Methyl palmitate	567,461609	25,22681236	3,94%	0,3942926	C16:0	270,45
Methyl octadeca	352,501007	29,54556371	2,45%	0,2449303	C18:0	298,5
cis-9-Oleic acid n	6490,54932	29,96778099	45,10%	4,5098657	C18:1	296,49
Methyl Linoleate	2108,30493	29,02908325	14,65%	1,4649256	C18:2	294,47
Methyl Arachidat	402,426697	29,97756767	2,80%	0,2796205	C20:0	326,56
Methyl Linolenat	442,05304	30,66054758	3,07%	0,3071543	C18:3	292,46
Methyl docosanc	393,831879	31,72079568	2,74%	0,2736485	C22:0	354,61
Methyl Erucate (I	3022,94409	32,97488187	21,00%	2,1004496	C22:1	352,59
Methyl lignocera	479,548981	41,64985275	3,33%	0,3332078	C24:0	382,66
Totals	**14391,8904**					

Figure S5. Example of a GC-chromatogram presenting main FAMEs in the lipid mixture and their signal integration.